

Intraoperative optical coherence tomography guided removal of premacular hemorrhage in Valsalva retinopathy

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Key words: Intraoperative optical coherence tomography, premacular hemorrhage, Valsalva retinopathy

A 32-year-old male presented with 4 weeks history of sudden decrease of vision in his right eye following a bout of cough. The left eye was normal. The anterior segment in the right eye was normal. A dilated fundus of the right eye showed a 6 mm × 4 mm area of premacular hemorrhage [Fig. 1a]. Spectral domain optical coherence tomography (SD-OCT) showed smooth convex dome-shaped hyper-reflectivity from blood with shadowing underneath [Fig. 1b]. After informed consent, the patient underwent 25-gauge pars plana vitrectomy with removal of premacular blood. The premacular blood remained unchanged after triamcinolone-assisted posterior vitreous detachment [Fig. 2]. The internal limiting membrane (ILM) was then stained with the help of brilliant blue G dye. After ILM peeling had been initiated, microscope-integrated intraoperative OCT (Rescan 700, Carl Zeiss Meditec, Germany) confirmed the location of blood in the sub-ILM space as the lifted torn edge of ILM was seen over the hemorrhage [Fig. 3a]. The ILM was seen as a separate undulating membrane now over the surface of hyper-reflective hemorrhage where ILM was yet to be peeled [Fig. 3b]. Once ILM peeling was complete, the surface of hemorrhage became irregular [Fig. 3c]. The hemorrhage was then cleared with the help of passive suction. The underlying retina showed flattened foveal contour. The fluid-air exchange was done and sclerotomies were messaged to prevent any leakage. The patient was advised topical steroids and antibiotics along with cycloplegic.

At 1-week follow-up, the best-corrected visual acuity was 6/9. The fundus appeared normal [Fig. 4a]. The vision was maintained at 6 weeks follow-up. SD-OCT showed flattened foveal contour [Fig. 4b].

The exact location of hemorrhage, whether subhyaloid or sub-ILM, has been disputed in literature. If two membranes

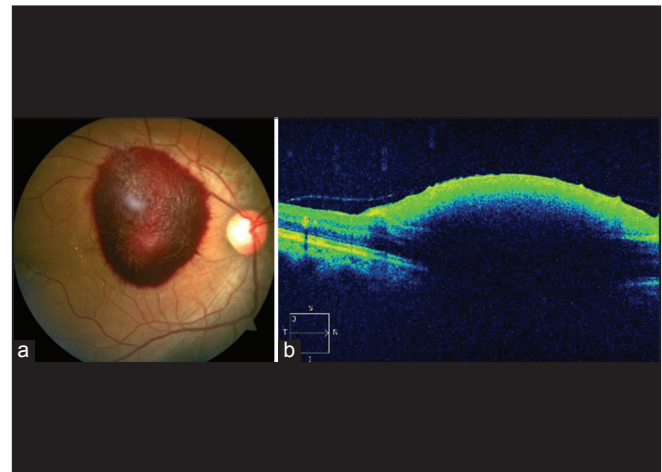


Figure 1: Fundus photograph of the right eye showing premacular hemorrhage (a). Spectral domain optical coherence tomography shows hyper-reflectivity from hemorrhage with shadowing underneath (b)

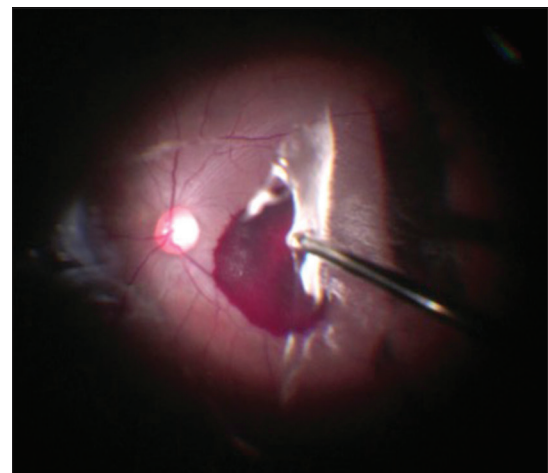


Figure 2: Intraoperative color photograph showing no change in premacular hemorrhage following posterior vitreous detachment (triamcinolone-assisted)

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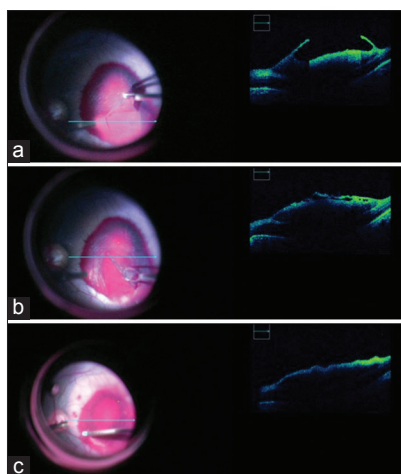


Figure 3: Intraoperative photographs with microscope integrated optical coherence tomography; edges of torn internal limiting membrane are seen where internal limiting membrane has been peeled (a). Internal limiting membrane is seen as separate layer from blood as undulating membrane where it is lifted but yet to be peeled (b). Inner surface of blood became irregular once internal limiting membrane peeling is complete (c)

can be seen on the OCT above the hemorrhage, it indicates sub-ILM position of the hemorrhage.^[1] However, that is not possible in all the cases with premacular hemorrhage. To the best of our knowledge, this is the first report to confirm sub-ILM location of hemorrhage in cases of Valsalva retinopathy using intraoperative OCT.

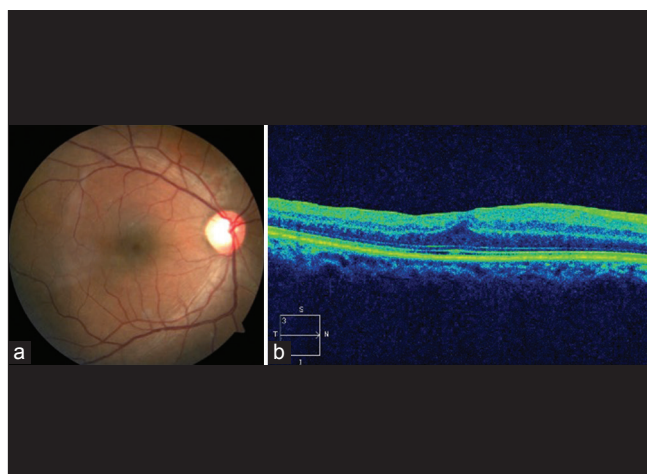


Figure 4: Fundus appeared normal at 1-week follow-up (a). The spectral domain optical coherence tomography shows flattened foveal contour at 6 weeks follow-up (b)

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Conflicts of interest

There are no conflicts of interest.

Reference

1. Goel N, Kumar V, Seth A, Raina UK, Ghosh B. Spectral-domain optical coherence tomography following Nd: YAG laser membranotomy in valsalva retinopathy. *Ophthalmic Surg Lasers Imaging* 2011;42:222-8.